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# Washington Basin Outlook Report May 1, 1996



# Basin Outlook Reports and Federal - State - Private Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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# SNOW SURVEY JOINS WORLD WIDE WEB

# NATURAL RESOURCES CONSERVATION SERVICE

Snow Survey and Water Supply Forecasting products are now available on the INTERNET. A few of our more popular (SNOTEL Update Reports, State Basin Outlook Reports, historic SNOTEL data, and products previously published in the Water Supply Outlook Report for the Western United States) are now available via our new Home Pages and our Anonymous FTP server.

The Universal Resource Locator (URL) for the Water Climate Center home page is:

http://www.wcc.nrcs.usda.gov/

The Universal Resource Locator (URL) for the Oregon/Washington Snow Survey home page is:

http://www.europa.com/~gillen

The address for the WCC Anonymous FTP server is:

ftp.wcc.nrcs.usda.gov

You can access the Anonymous FTP server using your INTERNET browser (Netscape, Mosaic, etc.) by changing the URL to:

ftp://ftp.wcc.nrcs.usda.gov/

We will continue to add more products and abilities to the Home Pages and Anonymous FTP server and welcome any comments and suggestions you might have.

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# Washington Water Supply Outlook

# May 1996

# General Outlook

There's nothing like an oddball spring to make a liar out of me. Last month I reported that readings at most of our SNOTEL sites had peaked, and were beginning their annual descent. Then April's cool temperatures and above normal precipitation slowed meltout to a dribble and increased snowpack. However, the increases were slight and may prolong normal spring runoff, but won't contribute much to the water supply.

# Streamflow

Eastern Washington forecasts for spring - summer streamflow are for near to above normal. They vary from 125% of average for the Methow River near Pateros to 94% of normal for the American River near Nile. May - September forecasts for many Western Washington streams aren't as good. The Cedar River near Cedar Falls, 80%; the Green River, 86%; and the Skagit River, 98%. Other Washington streams include Mill Creek at Walla Walla, 104%; the Wenatchee River at Plain, 107%; the Baker River near Concrete, 85%; the Elwha River near Port Angeles, 60%; and the Colville River, 104%. April streamflows were once again above normal throughout the state. The Similkameen River at Nighthawk was the highest at 330% of normal; and the Cowlitz River below Mayfield Dam, with 126% of normal, was the lowest in the state. streamflows were the following percentage of normal: Lewis River, 151%; Okanogan River, 280%; Spokane River, 139%; Columbia River at the Canadian border, 158%; and Yakima River at Parker, 172%. Many of the above normal flows can be attributed to the above precipitation during April, and to reservoir releases as managers prepare for spring runoff.

BASIN	PERCENT OF AVERAGE
	MOST PROBABLE FORECAST
	(50 PERCENT CHANCE OF EXCEEDANCE)

Spokane	100
Colville-Pend Oreille	
Okanogan-Methow112-1	125
Wenatchee-Chelan105-1	123
Yakima94-1	115
Walla Walla99-1	104
Cowlitz-Lewis98-1	
White-Green-Cedar65-	-86
North Puget Sound85-	-98
Olympic Peninsula60-	-76

# Snowpack

The May 1 statewide SNOTEL reading showed the snowpack at 90% of normal, up from 81% last month. Snowpack varied across the state, with the Olympic Peninsula River Basin reporting the lowest with 29% of average. The Entiat River Basin and Colockum Creek Basin were off the scale with over 700% normal snowpack remaining. Both of these basins have limited data collection points. Westside averages from SNOTEL and May 1 snow surveys include North Puget Sound River Basins with 84% of normal; White-Green-Cedar River Basins with 91%; and Lewis-Cowlitz Basins with 80% of normal. Snowpack along the east Snowpack along the east slopes of the Cascade Mountains include the Yakima with 101%, and the Wenatchee with 115%. Snowpack in the Spokane River Basin was at 68%; Pend Oreille River Basin, including Canadian data, had 108% of normal. Maximum snowcover in Washington was at Lyman Lake SNOTEL in the northcentral Cascades, with a water content of 71.1 inches. Twould normally have 58.7 inches of water content on May 1. This site did not change significantly from last month. Mid-elevation sites have begun normal meltout with about one-third of the sites reporting no snow-water-equivalent. However, high mountain snowpack remains near to above normal. April accumulations were minimal.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Colville  Pend Oreille Okanogan	Not Reported	NOT REPORTED108
Methow		139
Yakima		101
Lewis		63
North Puget Sound		84

# **Precipitation**

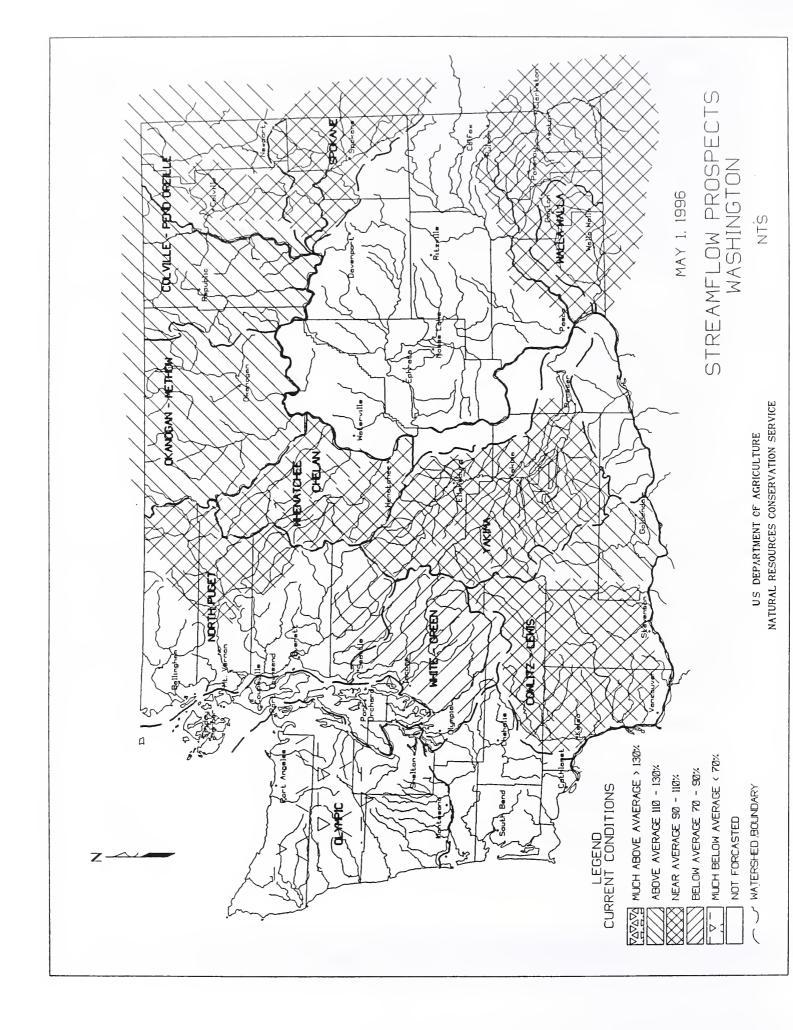
During the month of April the National Weather Service and Natural Resources Conservation Service climate stations showed much above average precipitation accumulation across the state. Precipitation varied from a high of 266% of average at Fish Lake SNOTEL to a low of 44% of normal at the Yakima Airport. Basin-wide averages for the water year varied from 134% of normal in the White-Green-Cedar River Basins, to 205% of normal in the Olympic Peninsula River Basin. This season's above average precipitation and saturated soils should help sustain near average streamflows for the season. The drawback to these conditions is that we are experiencing higher than normal erosion which leads to increased turbidity and sedimentation in streams and rivers.

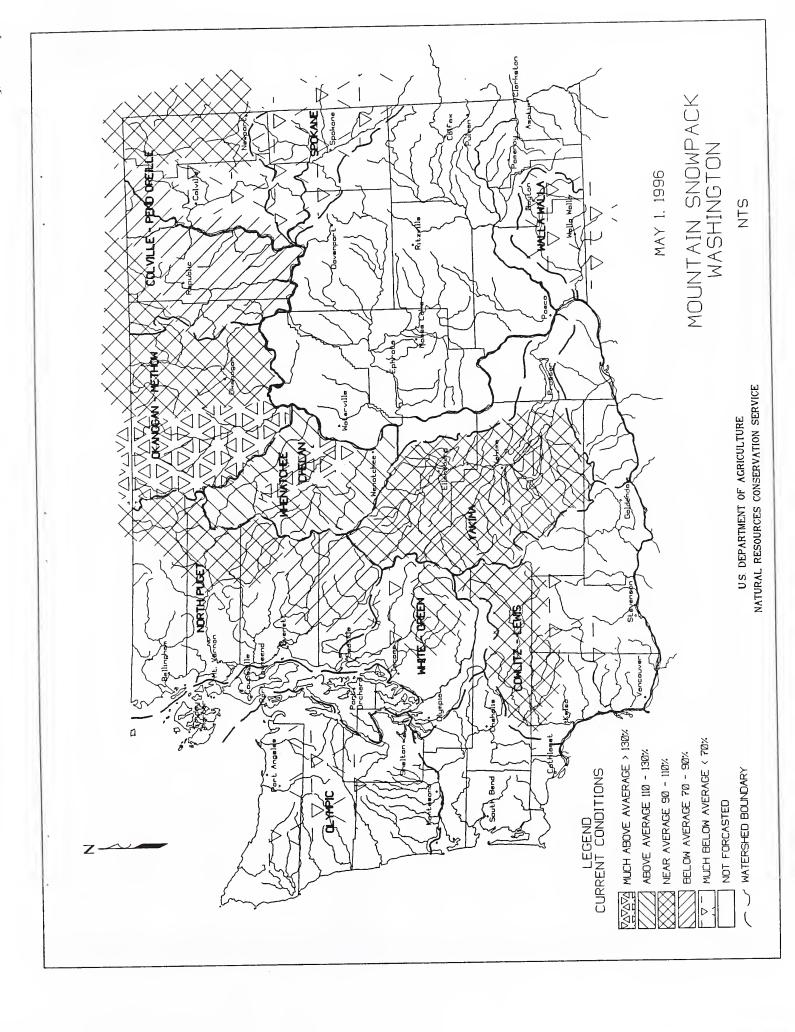
	APRIL	WATER YEAR
BASIN	PERCENT OF AVERAGE	PERCENT OF AVERAGE
Spokane		
Colville-Pend Orei	lle	
Okanogan-Methow		
White-Green-Cedar.		
North Puget Sound.		
	205	

# Reservoir

Reservoir storage in Washington remained near to above average for May 1. Reservoir storage in the Yakima Basin was 1,019,800 acre feet, 130% of normal. Storage at other reservoirs included Roosevelt at 88% of average, and the Okanogan reservoirs with 134% of normal for May 1. The power generation reservoirs include the following: Coeur d'Alene Lake, 399,500 acre feet, or 162% of normal; Chelan Lake, 460,100 acre feet, 103% of average and 68% of capacity; and Ross Lake at 154% of average and 71% of capacity. Many reservoir operators in the state continue to release water in anticipation of spring runoff and flood control.

BASIN	PERCENT OF	CAPACITY	PERCENT OF A	VERAGE
Spokane		168		2
Okanogan-Meth		91		4
Yakima		96		0
North Puget S	ound	71		4



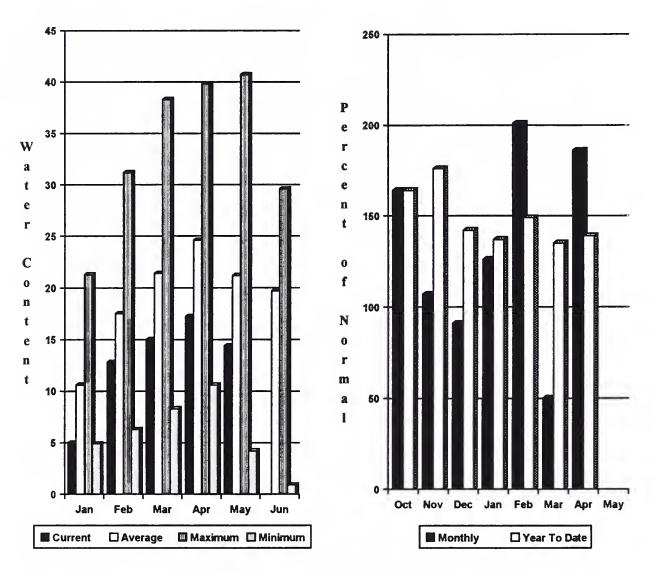


# BASIN SUMMARY OF SNOW COURSE DATA

MAY 1, 1996

SNOW COURSE	ELEVATION	DATE		WATER CONTENT	LAST YEAR	AVERAGE 1961-90	SNOW COURSE E	LEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
PEND OREILLE RIVER							YAKIMA RIVER						
BENTON MEADOW	2370	5/02/96	0	.0	.0	.0	BIG BOULDER CREEK	3200	5/01/96		7.8E		- 7.7
BENTON SPRING	4920	5/02/96	12	5.1	10.2	13.6	BLEWETT PASS#2PILLOW		5/01/96		2.85	9.7	4.9
BOYER MOUNTAIN	5250	4/30/96	29	11.7	26.4	23.6	BUMPING LAKE	3450	5/01/96		9.7E		7.5
BUNCHGRASS MEADOWS BUNCHGRASS MDWPILLO	5000 ₩ 5000	4/29/96 4/29/96	55 	22.0 22.0	31.6	26.8 26.9	BUMPING RIDGE PILLOW CAYUSE PASS	4600 5300	5/01/96 5/01/96		16.9S 103.7E	23.7 114.0	18.9 88.1
LOOKOUT PILLO		5/01/96		24.6	23.2	29.3	CORRAL PASS PILLOW	6000	5/01/96		33.95	37.8	29.5
NELSON CAN		4/26/96	14	5.7	11.8	7.2	FISH LAKE	3370	5/01/96		23.7E	23.8	22.4
KETTLE RIVER							FISH LAKE PILLOW	3370	5/01/96		26.5S	27.1	25.0
BARNES CREEK CAN		4/28/96	54	22.6	19.0	20.5	GREEN LAKE PILLOW	6000	5/01/96		20.85	29.6	19.7
BIG WHITE MTN CAN		4/29/96	50	20.1	23.5	19.9	GROUSE CAMP PILLOW	5380	5/01/96		11.5S	23.2	9.2
CARMI CAN GRAYSTOKE LAKE CAN		4/29/96 4/30/96	1 36	.2 12.9	1.1 15.0	1.7 18.1	LOST HORSE PILLOW MORSE LAKE PILLOW	5000 5400	5/01/96 5/01/96		8.6S 52.3S	18.1 75.9	8.2 44.4
MONASHEE PASS CAN		4/28/96	32	13.0	11.3	12.8	OLALLIE MDWS PILLOW	3960	5/01/96		34.45	46.1	51.0
TRAPPING CK LOW CAN		4/29/96	0	.0	.0	.0	SASSE RIDGE PILLOW	4200	5/01/96		24.75	35.5	24.1
TRAPPING CK UP CAN		4/29/96	1	.2	. 4	5.6	STAMPEDE PASS PILLOW	3860	5/01/96		31.85	47.5	39.1
COLVILLE RIVER	NO REPO	RT					TUNNEL AVENUE	2450	5/01/96		12.1E	11.1	12.7
OMAK LAKE, TWIN LAKES							WHITE PASS ES PILLOW	4500	5/01/96		15.0S	23.8	18.7
MOSES MTN PILLO	W 4800	5/01/96		10.6S	13.7	7.3	AHTANUM CREEK	6000	E / 01 / 06		20.00	29.6	10.7
SPOKANE RIVER FOURTH OF JULY SUM	3200	5/01/96	0	.0	.0	.0	GREEN LAKE PILLOW LOST HORSE PILLOW	6000 5000	5/01/96 5/01/96		20.8S 8.6S	18.1	19.7 8.2
LOST LAKE (d		5/01/96		57.8E	47.5	57.1	MILL CREEK	3000	3,01,50		0.05	10.1	0.2
MOSQUITO RDG PILLO		5/01/96		30.6	30.5	34.7	HIGH RIDGE PILLOW	4980	5/01/96		4.55	14.3	12.4
SUNSET PILLO	W 5540	5/01/96		25.0	22.2	36.5	TOUCHET #2 PILLOW	5530	5/01/96		22.6	30.1	27.3
LOOKOUT PILLO	W 5140	5/01/96		24.6	23.2	29.3	LEWIS - COWLITZ RIVERS						
NEWMAN LAKE							CAYUSE PASS	5300	5/01/96		103.7E	114.0	88.1
QUARTZ PEAK PILLO	W 4700	5/01/96		5.4	18.9	18.6	JUNE LAKE PILLOW	3200	5/01/96		2.75	24.8	19.6
OKANOGAN RIVER ABERDEEN LAKE CAN	4300	5/01/96		.0E	.0	1.7	LONE PINE PILLOW PARADISE PARK PILLOW	3800 5500	5/01/96 5/01/96		18.4S 66.2S	31.4 81.2	26. <b>4</b> 61.8
BLACKWALL PEAK CAN		5/01/96		36.5		36.3	PIGTAIL PEAK PILLOW	5900	5/01/96		57.0S	51.1	47.7
BRENDA MINE CAN		4/25/96	27	10.7	13.5	9.8	POTATO HILL PILLOW	4500	5/01/96		14.55	20.6	17.0
BROOKMERE CAN	3200	4/29/96	12	4.2	2.0	5.1	SHEEP CANYON PILLOW	4050	5/01/96		5.7s	19.4	34.7
ENDERBY CAN		4/30/96	94	37.0	36.6	42.9	SPENCER MDW PILLOW	3400	5/01/96		9.15	19.2	17.2
ESPERON CK. UP CAN		4/27/96	37	13.8	18.3	17.5	SPIRIT LAKE PILLOW	3100	5/01/96		.0s	4.2	.3
ESPERON CK. MID CAN		4/27/96	28	11.3	14.2	11.9 7.0	SURPRISE LKS PILLOW	4250 4500	5/01/96 5/01/96		32.8S 15.0S	46.3 23.8	36.1 18.7
FREEZEOUT CK. TRAII GREYBACK RES CAN		4/30/96 4/29/96	1 23	.6 8.3	4.4 9.0	7.0	WHITE PASS ES PILLOW WHITE RIVER	4500	5/01/96		15.05	23.0	10.7
HAMILTON HILL CAN		4/30/96	23	9.1	6.3	12.6	CAYUSE PASS	5300	5/01/96		103.7E	114.0	88.1
HARTS PASS	6500	4/30/96	118	48.0	49.4	45.1	CORRAL PASS PILLOW	6000	5/01/96		33.95	37.8	29.5
HARTS PASS PILLO		5/01/96		58.7S	56.4	42.0	MORSE LAKE PILLOW	5400	5/01/96		52.3S	75.9	44.4
ISINTOK LAKE CAN		4/26/96	17	4.9	6.3	6.3	GREEN RIVER						
LIGHTNING LAKE CAN		4/29/96	31	11.5	8.7	11.5	COUGAR MTN. PILLOW	3200	5/01/96		.05	.0	9.3
MCCULLOCH CAN		4/30/96	0	.0	1.6	2.4	STAMPEDE PASS PILLOW	3860	5/01/96		31.85	47.5	39.1
MISSEZULA MTN CAN MISSION CREEK CAN		5/01/96 5/01/96	14	4.4 19.4E	5.6	7.0 21.8	CEDAR RIVER MT. GARDNER PILLOW	2860	5/01/96		.05	.0	10.8
MONASHEE PASS CAN		4/28/96	32	13.0	11.3	12.8	TINKHAM CREEK PILLOW	3000	5/01/96		7.75	10.7	16.7
MT. KOBAU CAN		4/28/96	33	11.7	18.9	13.3	MEADOWS PASS PILLOW	3240	5/01/96		.05	.0	21.0
MUTTON CREEK #1	5700	5/01/96		12.5e	10.5	9.6	SNOQUALMIE RIVER						
OYAMA LAKE CAN		4/29/96	10	3.3	5.7	3.1	OLALLIE MDWS PILLOW	3960	5/01/96		34.4S	46.1	51.0
POSTILL LAKE CAN		4/30/96	19	7.2	7.5	6.4	SKYKOMISH RIVER						20.1
SALMON MDWS PILLO		5/01/96		1.25	9.8	1.1	STAMPEDE PASS PILLOW	3860	5/01/96		31.8S 25.4S	47.5 35.2	39.1 32.1
SILVER STAR MTN CAN SUMMERLAND RES CAN		4/27/96 4/25/96	80 15	32.2 5.0	33.3 5.3	29.7 6.3	STEVENS PASS PILLOW SKAGIT RIVER	4070	5/01/96		23.45	33.2	32.1
SUNDAY SUMMIT CAN		4/29/96	0	.0	.0	.8	BEAVER CREEK TRAIL	2200	5/01/96	0	.0	1.0	4.1
TROUT CREEK CAN		4/28/96	9	2.7	2.2	4.8	BEAVER PASS	3680	5/01/96	35	13.7	30.9	28.1
WHITE ROCKS MIN CAN		5/01/96	50	19.9	25.5	22.4		6000	5/01/96	138	53.1	67.6	61.7
METHOW RIVER							DEVILS PARK	5900	4/30/96	109	46.2	48.6	45.0
HARTS PASS	6500	4/30/96	118	48.0	49.4	45.1	FREEZEOUT CK. TRAIL	3500	4/30/96	1	. 6	4.4	7.0
HARTS PASS PILLO		5/01/96		58.7s	56.4	42.0	HARTS PASS	6500	4/30/96	118	48.0	49.4	45.1
MUTTON CREEK #1	5700	5/01/96			10.5	9.6	HARTS PASS PILLOW				58.7 <u>\$</u> .0	56.4 .0	42.0 8.3
SALMON MDWS PILLA CHELAN LAKE BASIN	W 4500	5/01/96		1.25	9.8	1.1	KLESILKWA CAN. LIGHTNING LAKE CAN.	3710 4000	4/28/96 4/29/96	0 31	11.5	8.7	11.5
LYMAN LAKE PILLO	₩ 5900	5/01/96		71.1S	80.7	58.7	LYMAN LAKE PILLOW	5900	5/01/96		71.15	80.7	58.7
MINERS RIDGE PILLO		5/01/96		55.65	58.0	51.3	MEADOWS CABIN	1900	5/01/96	0	.0	.0	1.1
PARK CK RIDGE PILLO		5/01/96		44.85	35.1	33.6	NEW HOZOMEEN LAKE	2800	4/30/96	0	.0	.0	4.5
RAINY PASS	4780	5/01/96	73	28.6	44.6	40.6	RAINY PASS	4780	5/01/96	73	28.6	44.6	40.6
RAINY PASS PILLA	OW 4780	5/01/96		50.05	52.0	36.8	RAINY PASS PILLOW	4780	5/01/96		50.0S	52.0	36.8
ENTIAT RIVER							THUNDER BASIN	4200	5/01/96	41	15.0	22.2	30.5 30.5
POPE RIDGE PILLA WENATCHEE RIVER	OW 3540	5/01/96		12.7S	14.5	1.6	THUNDER BASIN PILLOW	4200	5/01/96		25.85	28.8	30.5
BLEWETT PASS#2PILLO	OW 4270	5/01/96		2.85	9.7	4.9	BAKER RIVER SCHREIBERS MDW AM	3400	5/01/96		47.0e	51.0	56.2
FISH LAKE PILLA		5/01/96		2.65 26.5S	27.1	25.0	WATSON LAKES AM	4500	5/01/96		56.0e	55.0	67.2
LYMAN LAKE PILLO		5/01/96		71.15	80.7	58.7	ELWHA RIVER		.,,		,		4
STEVENS PASS PILLA		5/01/96		25.45	35.2	32.1	HURRICANE	4500	4/27/96	7	1.3	12.2	21.9
TROUGH #2 PILLA	OW 5310	5/01/96		19.95	13.8	2.5	MORSE CREEK						
UPPER WHEELER PILLS		5/01/96		3.35	14.0	4.8	COX VALLEY	4500	4/27/96	47	16.1	38.0	39.1
SQUILCHUCK CREEK STEMILT CREEK	NO REPO						DUNGENESS RIVER DEER PARK	5200	4/28/96	3	1.0	13.2	18.7
UPPER WHEELER PILLA COLOCKUM CREEK		5/01/96		3.35	14.0	4.8	QUILCENE RIVER MOUNT CRAG PILLOW	4050	5/01/96		14.75	37.5	22.4
TROUGH #2 PILL	OW 5310	5/01/96		19.95	13.8	2.5	WYNOOCHEE RIVER CARROL PASS	3650	5/01/96	18	8.0		26.9

Precipitation\* (% of normal)



\*Based on selected stations

The May 1 forecasts for summer runoff within the Spokane River Basin are for average flows. The forecast is based on a basin snowpack that is 68% of average and precipitation that is 139% of normal for the water year. April precipitation was 186% of average. Streamflow on the Spokane River was 139% of average for April. May 1 storage in Coeur d'Alene Lake was 399,500 acre feet, 162% of normal, and 168% of capacity.

# SPOKANE RIVER BASIN

Streamflow Forecasts - May 1, 1996

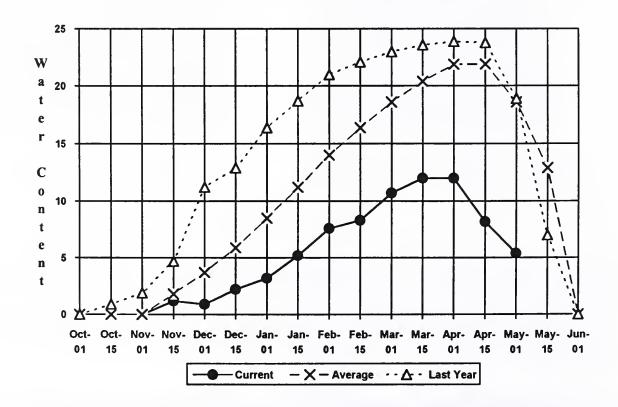
		<<	Drier		Future Co	onditions		Wetter	>>		
Forecast Point	Forecast   Period	90% (1000AF)	70% (1000AF)	1 5		Exceeding * Probable) (% AVG.)	1	30% (1000AF)	10% (1000AF)		30-Yr Avg. (1000AF)
SPOKANE near Post Falls (2)	MAY-SEP MAY-JUL	1469 1375	1690 1592		1840 1740	100 100		1990 1888	2211 2105		1846 1749
SPOKANE at Long Lake	MAY-JUL MAY-SEP	1588 1809	1815 2042		1970 2200	100 100	1	2125 2358	2352 2591		1975 2198
SPOKA Reservoir Storage (	NE RIVER BASIN (1000 AF) - End	of April			   	Watershed		NE RIVER		1,	.996
Reservoir	Usable   Capacity  	*** Usab This Year	le Storage Last Year	*** Avg	   Wate: 	rshed		Numbe of Data Si	***	s Ye	ear as % of Average
COEUR D'ALENE	238.5	399.5	140.5	246.7	Spoka	ane River		11	85		68

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

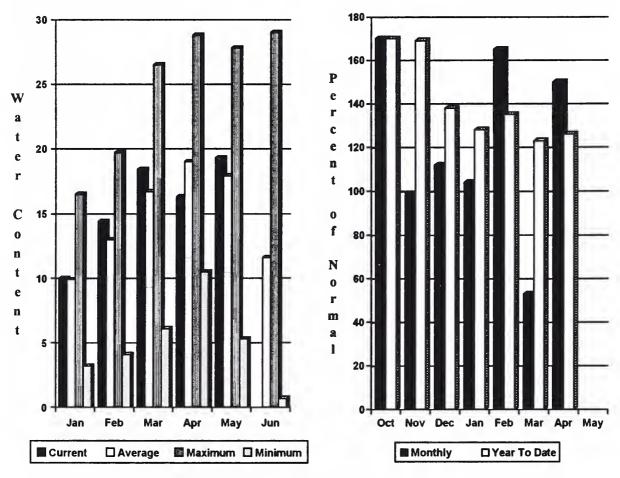
The average is computed for the 1961-1990 base period.

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
  (2) The value is natural flow actual flow may be affected by upstream water management.

# Quartz Peak SNOTEL Elevation 4700 ft.



Precipitation\* (% of normal)



\*Based on selected stations

Forecasts for the basin are all near to above average. Spring and summer forecast for the Kettle River streamflow is for 121% of normal; the Pend Oreille, below Box Canyon, 115%; and Priest River, near the town of Priest River, 110% of normal. Forecast for the Columbia River at Birchbank is for runoff to be 115% of normal. April streamflow was 155% of normal on the Pend Oreille River; 158% on the Columbia at the International Boundary; and 198% on the Kettle River. May 1 snowcover was 108% of normal for the Pend Oreille Basin, 88% for the Kettle River Basin. The Colville River Basin was not reported this month. Precipitation during April was 150% of average, bringing the water year-to-date to 126% of normal.

# COLVILLE - PEND OREILLE RIVER BASINS

Streamflow Forecasts - May 1, 1996

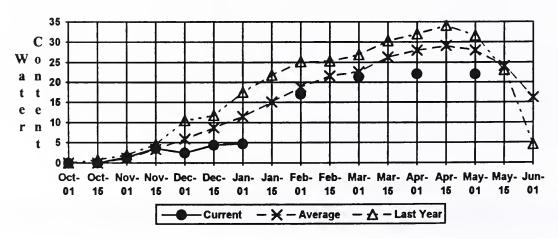
		<<====	Drier •		Future Co	onditions	Wetter	>>	!
Forecast Point	Forecast Period		70%	1 5	0% (Most	Exceeding * = Probable)	30% (1000AF)	10% (1000AF)	   30-Yr Avg.   (1000AF)
PEND OREILLE Lake Inflow (1,2)	MAY-JUL MAY-SEP	10745 12030	12089 13522		12700 14200	115   116	13311 14878	14655 16370	11070 12290
PRIEST nr Priest River (1,2)	MAY-JUL MAY-SEP	530 590	640 700		690 750	110   110	740 800	850 910	627 680
PEND OREILLE bl Box Canyon (1,2)	MAY-JUL MAY-SEP	10365 11605	12039 13458	   	12800 14300	114 I 115 I	13561 15142	15235 16995	11220 12430
	MAY-JUN	8667	10065	1	10700	114	11335	12733	9410
CHAMOKANE CK nr Long Lake	MAY-AUG	5.15	8.04		10.00	106	11.96	14.85	9.40
COLVILLE at Kettle Falls	MAY-SEP MAY-JUL MAY-JUN	64 54 47	78 67 59		87 76 67	104   104   105	97 85 75	111 98 87	84 73 64
KETTLE near Laurier	MAY-SEP MAY-JUL	1642 1600	1802 1737		1910 1830	121   123	2018 1923	2178 2060	1582 1489
	MAY-JUN	1427	1539		1615	123	1691	1803	1314
COLUMBIA at Birchbank (1,2)	MAY-JUL MAY-SEP MAY-JUN	33232 42536 23514	35479 45399 25086		36500 46700 25800	114   115   114	37521 48001 26514	39768 50864 28086	32090 40760 22620
COLUMBIA at Grand Coulee Dm (1,2)	MAY-SEP MAY-JUL	62123 50213	66302 53642		68200 55200	118   116	70098 56758	74277 60187	57921 47614
	MAY-JUN	38263	40833	į	42000	117	43167	45737	35827
COLVILLE - PEND ( Reservoir Storage (100	OREILLE RIVE	R BASINS of April			<del> </del> 	COLVILLE - Watershed Sno	PEND OREILLE	RIVER BAS	INS , 1996
Reservoir	Usable   Capacity  	*** Usal This Year	ble Storaç Last Year	ge *** Avg	   Water 	shed	Numbe of Data Si	r This	Year as % of Tr Average
ROOSEVELT	5232.0			1310.0		lle River	0	0	0
BANKS	715.0	660.9	608.0	435.0	l Pend	Oreille Rive	r 87	123	108
					l				

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

# Bunchgrass Meadow SNOTEL Elevation 5000 ft.

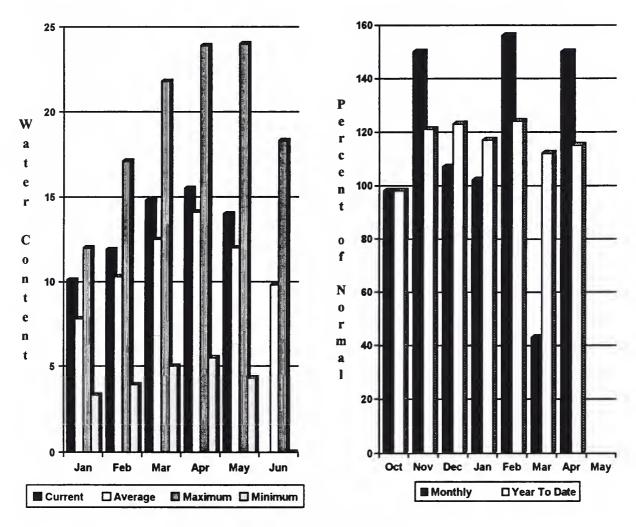
Kettle River



<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

<sup>(2) -</sup> The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

Summer runoff forecast for the Okanogan River is 112% of normal; the Similkameen River, 112%; the Methow River, 125%; and Salmon Creek, 116% of normal. May 1 snowcover in the Okanogan Basin was 95% of normal, and in the Methow, 139%. April precipitation in the Okanogan-Methow was 150% of normal, with water year-to-date at 115% of average. April streamflow on the Methow River was 224% of normal; 280% on the Okanogan River; and 330% on the Similkameen. Snow-water-content at Harts Pass SNOTEL, elevation 6,500 feet, was 58.7 inches. Normal for this site is 42 inches. Storage in the Conconully Reservoirs was 21,500 acre feet, which is 91% of capacity and 134% of the May 1 average.

# OKANOGAN - METHOW RIVER BASINS

Streamflow Forecasts - May 1, 1996

			Drier	- Future Co	onditions -	Wette.	r ====>>	
Forecast Point	Forecast			Chance Of E	xceeding *			
	Period	90%	70%	50% (Most	Probable)	I 30%	10%	30-Yr Avg
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF
SIMILKAMEEN nr Nighthawk (1)	MAY-SEP	1210	1375	1450	112	1525	1690	1300
	MAY-JUL	1136	1283	1350	112	1417	1564	1205
	MAY-JUN	930	1071	1135	112	1199	1340	1014
OKANOGAN RIVER nr Tonasket (1)	MAY-SEP	1128	1494	1660	112	I 1826	2192	1485
	MAY-JUL	1020	1343	1490	112	1637	1960	1328
	MAY-JUN	863	1116	1230	112	1344	1597	2095
SALMON CREEK near Conconully	MAY-JUL	10.9	16.9	21	116	1 25	31	18.0
•	MAY-SEP	11.5	17.7	22	116	26	33	18.9
ETHOW RIVER near Pateros	MAY-SEP	963	1027	1070	125	1113	1177	854
	MAY-JUL	906	963	1001	127	1039	1096	786
	MAY-JUN	751	804	840	128	876	929	659
						ļ		
OKANOGAN - ME	THOW RIVER B	ASINS			OKANOG	AN - METHOW R	IVER BASINS	1 N C D E C C C C C C C C C C C C C C C C C
Reservoir Storage (10				i		nowpack Analy		, 1996
; *== CZ== CZ== > CCC==== CCC=== CCC					*********	*==*=======		****
Pocorvoir	Usable		e Storage **	*   Water		Numb		Year as % o

10.2

8.0 |

8.0 |

Okanogan River

Methow River

Data Sites

3

Last Yr

137

The average is computed for the 1961-1990 base period.

SALMON LAKE

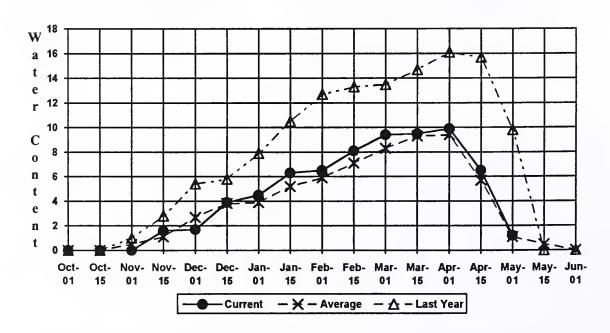
CONCONULLY RESERVOIR

13.1

Capacity| This Last | Year Year Avg |

13.0

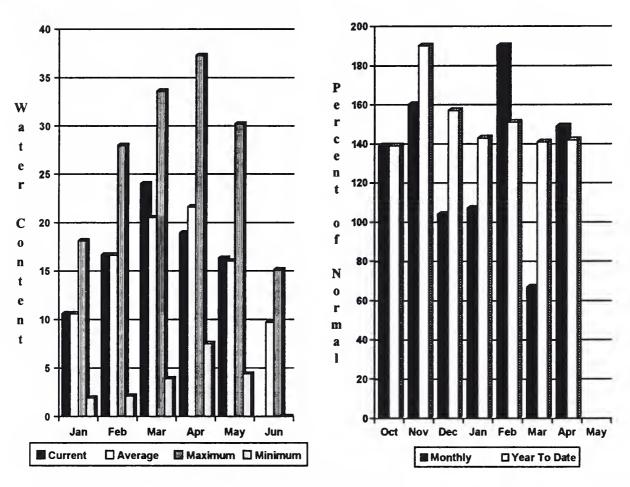
# Salmon Meadows SNOTEL Elevation 4500 ft.



<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

Precipitation during April was 149% of normal in the basin and 142% for the year-to-date. Runoff for the Entiat River is forecast to be 123% of normal for the summer. The May-September forecast for the Chelan River is for 106% of normal; for the Wenatchee River, 107%; and 109% for the Stehekin. Icicle Creek and Stemilt Creek are both forecast to be near normal this summer. Streamflow for April on the Chelan River was 183% of average; on the Wenatchee River it was 170% May 1 snowpack in the Wenatchee Basin was 115% of average. The Chelan Basin was 123% of average, and Stemilt Creek Watershed was down to 69% of normal. Snowpack in the Entiat River Basin was much above normal. Reservoir storage in Lake Chelan was 460,100 acre feet or 103% of the May 1 average and 68% of capacity. Lyman Lake SNOTEL had the most snow water with 71.1 inches of water. This site normally has 58.7 inches; last year it had 80.7 inches on May 1.

# WENATCHEE - CHELAN RIVER BASINS

Streamflow Forecasts - May 1, 1996

		<<=====	Drier ===	=== F	uture Co	onditions =	===== Wette	r ====>>	
Forecast Point	Forecast Period	90% (1000AF)	70% (1000AF)	1 50	(Most	Exceeding * Probable) (% AVG.)		10% (1000AF)	   30-Yr Avg.   (1000AF)
CHELAN RIVER near Chelan	MAY-SEP	989	1055		1100	106	1145	1211	1041
	MAY-JUL MAY-JUN	877 639	938 705	1	980 750	108 108	l 1022 l 795	1083 861	905 693
				i			1		
STEHEKIN near STEHEKIN	MAY-SEP	742	788	I	820	109	852	898	751
	MAY-JUL	613	659	1	690	110	721	767	625
	MAY-JUN	428	477	1	510	110	543	592	462
ENTIAT RIVER near Ardenvoir	MAY-SEP	233	246	i	255	123	264	277	208
	MAY-JUL	209	222	1	231	123	240	253	188
	MAY-JUN	162	175	1	185	123	195	208	150
WENATCHEE at Plain	MAY-SEP	990	1064	i	1115	107	1166	1240	1042
	MAY-JUL	893	951	1	990	107	1029	1087	925
	MAY-JUN	694	739	1	770	108	801	846	716
STEMILT nr Wenatchee (miners in)	MAY-SEP	103	130	į	148	107	166	193	138
CICLE CREEK nr Leavenworth	APR-SEP	269	341	1	390	105	1 439	511	370
	APR-JUL	249	315	1	360	106	405	471	340
	APR-JUN	197	249	1	285	106	321	373	270
OLUMBIA R. bl Rock Island Dam (2)	MAY-SEP	66798	71027	1	73900	117	76773	81002	62987
	MAY-JUL	54320	57821	1	60200	115	62579	66080	52239
	MAY-JUN	40973	43609	1	45400	115	47191	49827	3 9 5 0 9
WENATCHEE - CH	TAN DIVED I	DACTNO		.=====		WEND TO	HEE - CHELAN		
Reservoir Storage (1000	AF) - End	of April		i		Watershed S	nowpack Analy	sis - May 1	, 1996
	Usable		le Storage				Numb		Year as & of
Reservoir	Capacity	This	Last	i	Wate	rshed	of		
	1	Year		Avg I			Data S		Yr Average
CHELAN LAKE	676.1	460.1		48.8	_	an Lake Basi			123
				1	Entia	at River	1	88	794
				i			•		

The average is computed for the 1961-1990 base period.

# Pope Ridge SNOTEL Elevation 3540 ft.

Wenatchee River

Squilchuck Creek

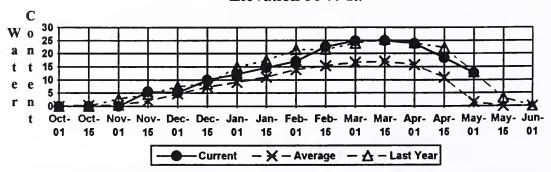
Stemilt Creek

Colockum Creek

115

0

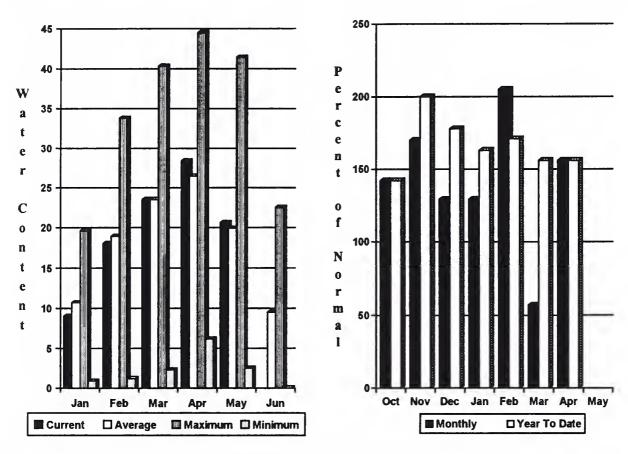
69 796



<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1)</sup> - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels. (2) - The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

May 1 reservoir storage for the five major reservoirs was 1,019,800 acre feet, 130% of average. May 1 summer streamflow forecasts are for near normal in the Yakima Basin. Forecasts for the Yakima River at Cle Elum are for 96% of normal; Naches River, 96%; the Yakima River at Parker, 98%; Ahtanum Creek, 105%; and the Tieton River, 102%. Klickitat River near Glenwood is forecast at 115% of normal flows this summer. April streamflows within the basin were; the Yakima River at Parker, 172% of normal; the Yakima near Cle Elum, 221%; and the Naches River at Naches, 163%. May 1 snowpack was 101%, based upon 14 snow courses and SNOTEL readings within the Yakima Basin. Precipitation was 156% of normal for April and 156% for the water year-to-date. Volume forecasts for the Yakima Basin are for natural flow. they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available which includes irrigation return flow.

# YAKIMA RIVER BASIN

# Streamflow Forecasts - May 1, 1996

		<<-===	Drier	Future	Conditions =	Wetter	====>>	l
Forecast Point	Forecast			- Charac (	NE TUIL - 4			
rorecast roint	Period	90%			Of Exceeding *		100	
	Period		70%		st Probable)		10%	30-Yr Avg.
		(1000AF	) (1000AF)	(1000)	AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)
KEECHELUS LAKE INFLOW	MAY-JUL	75	B5	9:	95	98	108	96
	MAY-SEP	82	95	1 103	96	1111	124	107
	MAY-JUN	60	70	i 7		1 84	94	81
				i	, , , ,		21	01
KACHESS LAKE INFLOW	MAY-JUL	81	87	I 92		97	104	86
	MAY-SEP	83	92	1 9'		103	111	92
	MAY-JUN	68	75	1 79	107	l 83	90	- 74
LE ELUM LAKE INFLOW	MAY-JUL	339	357	370	109	1 383	401	339
DE EDON BANC INTEGRA	MAY-SEP	372	395	410		1 425	448	378
	MAY-JUN	266	286	1 300				
	PMI-JUN	200	200	1 300	109	314	334	276
AKIMA at Cle Elum	MAY-JUN	476	514	540	99	566	604	546
	MAY-JUL	581	622	i 650	) 99	678	719	657
	MAY-SEP	623	675	710		745	797	740
	021	020	0.5	1	, ,			740
BUMPING LAKE INFLOW	MAY-SEP	96	107	114	97	121	132	117
	MAY-JUL	90	98	1 104	98	110	118	106
	MAY-JUN	72	79	I B	98	1 89	96	86
MERICAN RIVER near Nile	MAY OFF	0.1	90	   96	- 04	1 100		100
MERICAN RIVER Hear NIIe	MAY-SEP	81				102	111	102
	MAY-JUL	74	82	86		93	101	92
	MAY-JUN	58	67	1 72	2 96	78	86	75
RIMROCK LAKE INFLOW	MAY-SEP	182	197	1 200	3 102	1 219	234	204
	MAY-JUL	152	163	i 17:		1 179	190	167
	MAY-JUN	117	126	1 132		1 138	147	129
				i		İ		
NACHES near Naches	MAY-SEP	571	624	660	96	l 696	749	686
	MAY-JUL	524	567	J 59*	7 98	627	670	609
	MAY-JUN	429	468	495	5 98	522	561	505
HTANUM CREEK nr Tampico (2)	MAY-SEP	32	37	40	105	1 43	49	38
BITATON CREEK III Tampico (2)	MAY-JUL	28	33	1 36		1 39	44	34
			27					
	MAY-JUN	24	21	30	107	33	36	. 28
'AKIMA near Parker	MAY-SEP	1377	1480	1550	98	1620	1723	1580
	MAY-JUL	1235	1327	1390		1453	1545	1390
	MAY-SEP	1377	1480	1 1550	_	1620	1723	1580
				1		!		
CLICKITAT near Glenwood	MAY-JUN	<b>B</b> 6	94	1 100		106	114	87
	MAY-SEP	116	127	135	5 115	143	154	117
	A RIVER BASIN					YAKIMA RIVER E		
Reservoir Storage (				1		nowpack Analys		
	Usable I		ble Storage			Numbe		Year as % of
Reservoir	Capacity		Last		tershed	of		Tear as & Or
COCT AOIT		Year	Year	Avg	rerailed	Data Si		
TEECHELUS	157.8	151.6		•	kima River	14	78	101

159.5 144.0 |

303.3 308.0 |

15.0

8.5

Ahtanum Creek

70

106

The average is computed for the 1961-1990 base period.

KACHESS CLE ELUM

RIMROCK

BUMPING LAKE

239.0 235.2 154.5 197.0 |

412.8

29.4

190.8

436.9

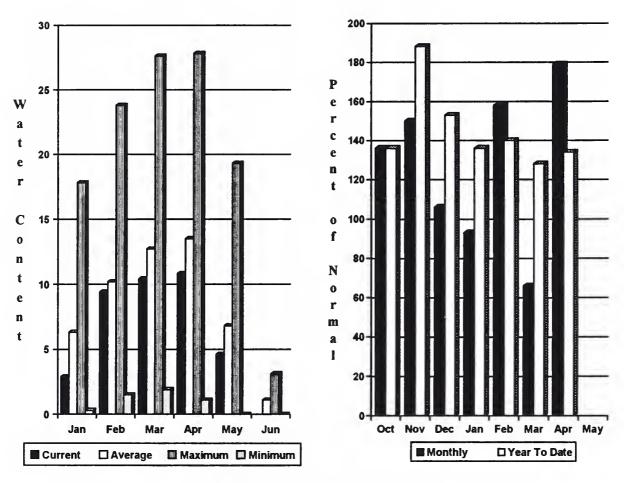
33.7

198.0

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

April precipitation was 179% of average, bringing the year-to-date precipitation to 134% of normal. May 1 snowpack was 68% of average. The forecast is for 99% of average streamflow in the Walla Walla River for the coming summer; for the Grande Ronde at Troy, 104%; and 104% for Mill Creek. April streamflow was 240% of normal for the South Fork Walla Walla River; 154% for the Snake River; and 148% for the Grande Ronde River near Troy. The Touchet SNOTEL site had 22.6 inches of snow-water-equivalent. The normal May 1 reading for this site is 27.3 inches.

# WALLA WALLA RIVER BASIN

Streamflow Forecasts - May 1, 1996

		<<	Drier	Future Co	onditions	Wetter	>>	
Forecast Point	Forecast Period	90%   (1000AF)	70% (1000AF)		Exceeding * = Probable)   (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GRANDE RONDE at Troy (1)	MAY-JUL MAY-SEP	666 738	834 925	910   1010	104   104	986 1095	1154 1282	872 970
SNAKE blw Lower Granite Dam (1,2)	MAY-JUL MAY-SEP	13810 16695	16072 19312	1 17100 1 20500	101	18128 21688	20390 24305	16940 19650
MILL CREEK at Walla Walla	MAY-SEP MAY-JUL MAY-JUN	4.62 4.43 4.39	6.51 6.32 6.18	7.80 7.60 7.40	104   104   104	9.09 8.88 8.62	10.98 10.77 10.41	7.50 7.30 7.10
SF WALLA WALLA nr Milton Freewater	MAY-JUL MAY-SEP	31 43	34 47	I 37 I 50	99   99	3 9 5 3	42 57	37 50
COLUMBIA R. at The Dalles (2)	MAY-SEP MAY-JUL MAY-JUN	83045 66944 52591	89865 72634 57002	94500   76500   60000	110   107   108	99135 80366 62998	105955 86056 67409	85635 71413 55578
WALLA WALL Reservoir Storage (100	A RIVER BAS O AF) - End					LA WALLA RIVE owpack Analys		, 1996
Reservoir	Usable   Capacity		e Storage * Last	**     Wate	rshed	Numbe of		Year as % of

Mill Creek

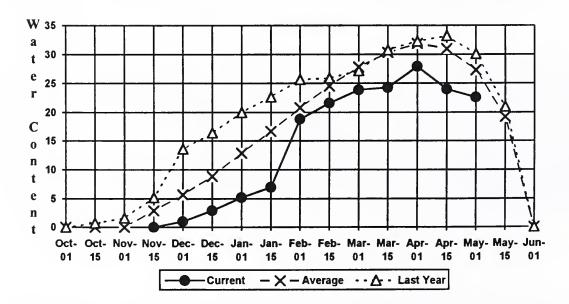
Data Sites

Last Yr Average

68

The average is computed for the 1961-1990 base period.

# Touchet #2 SNOTEL Elevation 5530 ft.

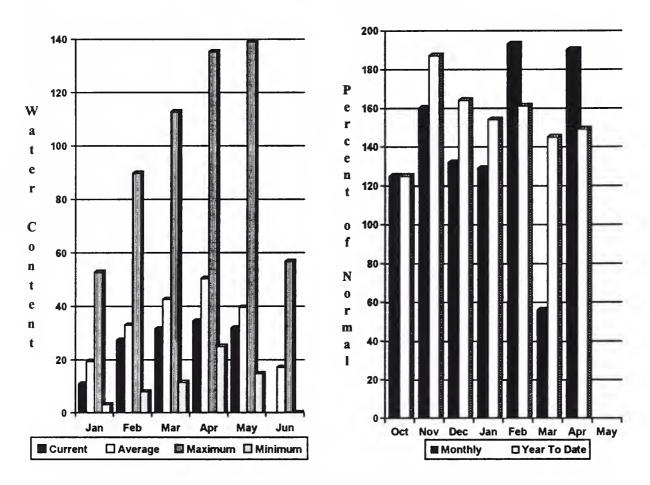


<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

<sup>(2) -</sup> The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

The forecast for summer runoff in the Lewis River Basin is 98% of normal; the Cowlitz River at Castle Rock is forecast for 109% of normal runoff. April streamflow for the Cowlitz River was 126% of average, and 151% for the Lewis River. April precipitation was 190% of normal, 149% of average for the water year. May 1 snowcover for the Cowlitz River Basin was 98%, and the Lewis River Basin was 63% of The Paradise Park SNOTEL recorded the most water content for average. the basin with 66.2 inches of water. Normal May 1 water content is 61.8 inches. June Lake SNOTEL, elevation 3200 feet, reported 20.9 inches of precipitation for the month, 190% of normal. June Lake has collected over 206 inches of precipitation since October 1. near record events have contributed greatly to this year's major flooding of the Lewis and Cowlitz Rivers.

# COWLITZ - LEWIS RIVER BASINS

Streamflow Forecasts - May 1, 1996

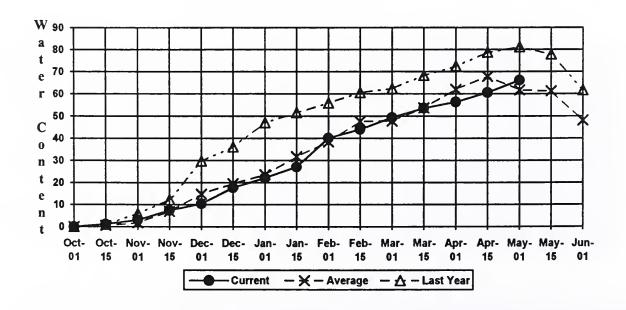
		<<=====	Drier	Future Co	onditions -	Wette	>> !	
Forecast Point	Forecast Period	   =======   90%   (1000AF)	70% (1000AF)		Probable)	! 30% ! (1000AF)	10%   10%   (1000AF)	30-Yr Avg. (1000AF)
LEWIS RIVER at Arie1 (2)	MAY-JUL	506	609	680	98	751	854	696
	MAY-JUN	422	508	566	98	624	710	578
	MAY-SEP	618	744	830	98	916	1042	848
COWLITZ R. bl Mayfield Dam (2)	MAY-SEP	800	1264	1 1580	103	1896	2360	1531
	MAY-JUL	674	1064	1 1330	103	1596	1986	1292
	MAY-JUN	539	855	1 1070	103	1285	1601	1038
COWLITZ R. at Castle Rock (2)	MAY-SEP	1213	1807	2210	109	2613	3207	2021
	MAY-JUL	1000	1494	1 1830	109	2166	2660	1679
	MAY-JUN	800	1199	1 1470	109	1741	2140	1349
CLICKITAT near Glenwood	MAY-JUN	86	94	100	115	! 106	114	87
	MAY-SEP	116	127	135	115	! 143	154	117
COWL1TZ - LE Reservoir Storage (10	WIS RIVER BAS			 		ITZ - LEWIS RIV Snowpack Analy:		1996
Reservoir	Usable   Capacity	*** Usab) This Year	e Storage * Last Year A		rshed	Numbe of Data S:		Year as % of

Cowlitz River Lewis River

63

The average is computed for the 1961-1990 base period.

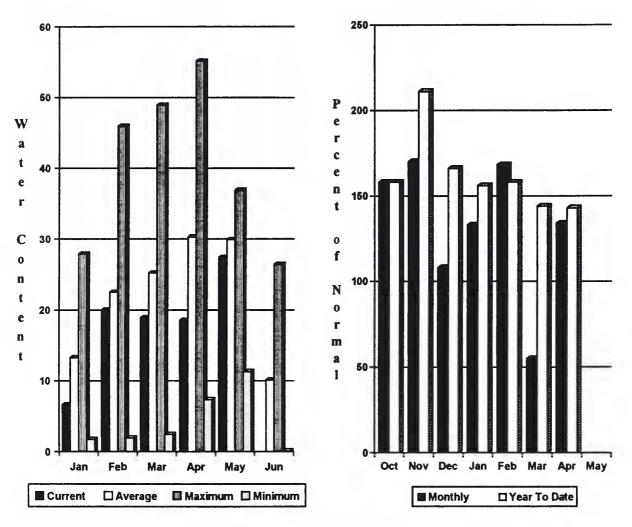
# Paradise SNOTEL Elevation 5120 ft.



<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

Summer runoff is forecast to be 86% of normal for the Green River; and 80% for the Cedar River near Cedar Falls; 65% for the Rex River; 83% for the South Fork of the Tolt River; and 82% for the Cedar River at Cedar Falls. All forecasts in the basin are down slightly from last month. May 1 snowpack was 117% of normal in the White River Basin, 66% in the Green River Basin. Very little snow remains below 3500 feet elevation in the Cedar River Basin. Water content on May 1 at the Morse Lake SNOTEL, at an elevation of 5,400 feet, was 52.3 inches. This site has a May 1 average of 44.4 inches and usually carries snow well into June. April precipitation was 134% of normal, bringing the water year-to-date to 143% of average for the Basin.

# WHITE - GREEN - CEDAR RIVER BASINS

Streamflow Forecasts - May 1, 1996

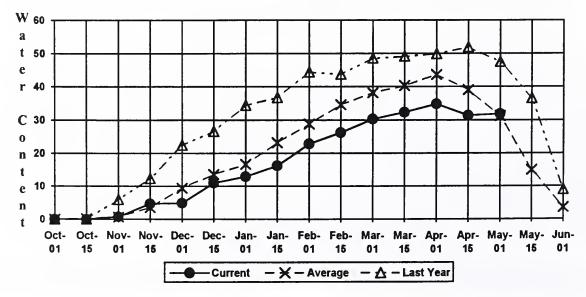
		<<====	Drier	Future Co	onditions =	Wetter	>>	 
Forecast Point	Forecast Period	90%   (1000AF)	70% (1000AF)	= Chance Of E   50% (Most   (1000AF)	Probable)	30%   (1000AF)	10% (1000AF)	   30-Yr Avg.   (1000AF)
GREEN RIVER below Howard Hanson Dam	MAY-JUL	109	131	146	86	161	183	170
	MAY-SEP	129	153	170	86	187	211	198
	MAY-JUN	94	113	126	86	139	158	-147
CEDAR RIVER near Cedar Falls	MAY-JUL	31	39	44	78	49	57	56
	MAY-SEP	36	45	51	80	57	66	64
	MAY-JUN	26	33	37	78	41	47	47
REX RIVER near Cedar Falls	MAY-JUL	7.3	10.4	1 12.6	66	1 14.8	17.9	19.2
	MAY-SEP	9.3	12.3	1 14.3	65	1 16.3	19.3	22
	MAY-JUN	6.7	9.2	1 10.9	65	1 12.6	15.1	16.8
CEDAR RIVER at Cedar Falls	MAY-JUL	13.2	32	44	82	57	75	54
	MAY-SEP	9.0	31	45	82	60	81	55
	MAY-JUN	20	33	43	82	52	65	52
SOUTH FORK TOLT near Index	MAY-JUL	6.5	8.0	9.0	79	10.0	11.5	11.4
	MAY-SEP	8.3	10.2	11.5	83	12.8	14.7	13.9
	MAY-JUN	5.45	6.66	7.48	80	8.30	9.51	9.30

WHITE - GREEN RIVER BASINS   Reservoir Storage (1000 AF) - End of April					WHITE - GREEN RIVER BASINS   Watershed Snowpack Analysis - May 1, 1996				
Reservoir		Capacity		Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Yea.	r as % of Average
						White River	3	83	117
						Green River	2	67	66
						Cedar River	0	0	0

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

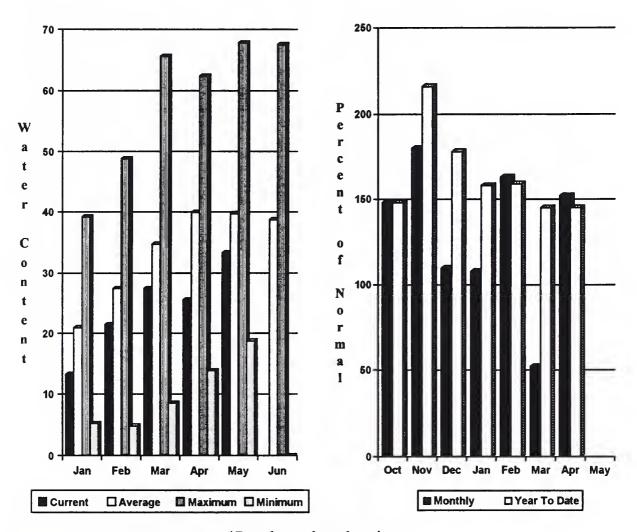
The average is computed for the 1961-1990 base period.

# Stampede Pass SNOTEL Elevation 3860 ft.



<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels. (2) - The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

Forecast for the Skagit River streamflow is for 98% of normal for the spring and summer periods. April streamflow in the Skagit River was 129% of average. Other forecast points included the Baker River at 85%, and Thunder Creek at 97%. Basin-wide precipitation for April was 152% of average, sustaining the water year-to-date at 145% of normal. May 1 snowcover in the Skagit River Basin was 93%; the Baker River Basin was not reported; and the Snohomish River Basin was 75% of average. Rainy Pass SNOTEL, at 4,780 feet, had 50 inches of water content; normal May 1 water content is 36.8 inches. May 1 reservoir storage showed Ross Lake at 154% normal and 71% of capacity. Unlike many westside river basins, the Skagit River is largely supplied by high elevation snowpack which remains well above normal.

For more information contact your local Natural Resources Conservation Service office.

# NORTH PUGET SOUND RIVER BASINS

Streamflow Forecasts - May 1, 1996

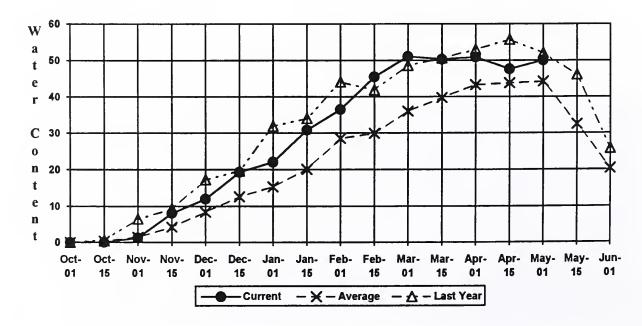
Chance Of 1	onditions =  Exceeding *  Probable)  (% AVG.)	I 30	Wetter> 0% 10% 00AF) (1000A	-	30-Yr Avg.
50% (Most	Probable)				30-Yr Avg.
50% (Most	Probable)				30-Yr Avg.
	•				30-Yr Avg.
(1000AF)	(% AVG.)	(100	00AF) (1000A	F33 1	
				t)	(1000AF)
202	0.7	-	212 226		200
	-				209
	-	•			,308
125	97	1 1	134 146		129
1920	98	1 20	044 2227		1963
1575					1608
1160	98				1188
		1			
568	81	1 6	602 653		703
786	85	8	838 913		930
413	86	1 4	146 494		478
	1575 1160 568 786	300 97 125 97 1920 98 1575 98 1160 98 568 81 786 85	300 97   3 125 97   1 1920 98   20 1575 98   16 1160 98   12 568 81   6 786 85   6	300 97   308 321 125 97   134 146 1920 98   2044 2227 1575 98   1677 1826 1160 98   1249 1381 568 81   602 653 786 85   838 913	300 97   308 321 125 97   134 146 1920 98   2044 2227 1575 98   1677 1826 1160 98   1249 1381 568 81   602 653 786 85   838 913

NORTH PUGET SO Reservoir Storage (100	 	NORTH PUGET Watershed Snowpa	SOUND RIVER I ack Analysis -		96			
Reservoir	Usable   Capacity  	*** Usa This Year	ble Stora Last Year	ge ***   	Watershed	Number of Data Sites	This Yea: Last Yr	
ROSS	1404.1	992.7	557.8	644.4	Snohomish River	3	71	75
DIABLO RESERVOIR	90.6	87.0	87.5		Skagit River	13	86	94
GORGE RESERVOIR		NO REPO	RT	 	Baker River	2	97	83

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

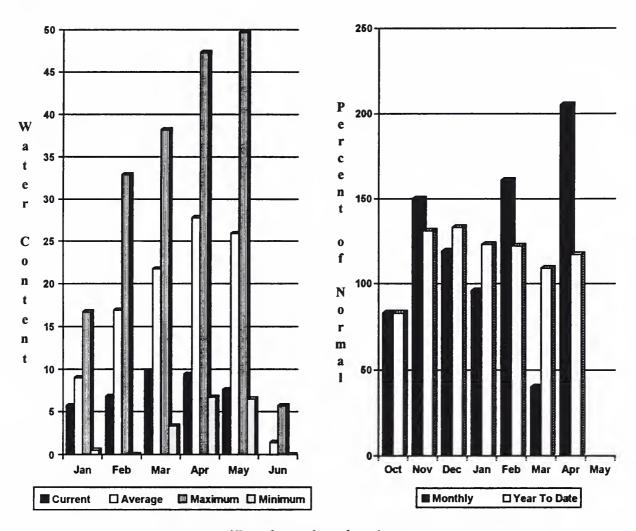
The average is computed for the 1961-1990 base period.

# Rainy Pass SNOTEL Elevation 4780 ft.



<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Precipitation\* (% of normal)



\*Based on selected stations

The May forecasts for streamflow runoff in the Dungeness River Basin is for 76% of average; the Elwha River is forecasted for 60% of average. The Big Quilcene can expect below normal runoff this summer as well. The Olympics received a well deserved and long overdue 205% of normal precipitation last month; total accumulation is 109% of normal for the water year. April precipitation at Quillayute was 13.3 inches, which is 110% of normal. Average May 1 snowcover in the Olympic Basin was much below average at 29%. The Mount Crag SNOTEL near Quilcene had 14.7 inches of snow-water-equivalent on May 1. Normal for this site is 22.4 inches.

# OLYMPIC PENINSULA RIVER BASINS

Streamflow Forecasts - May 1, 1996

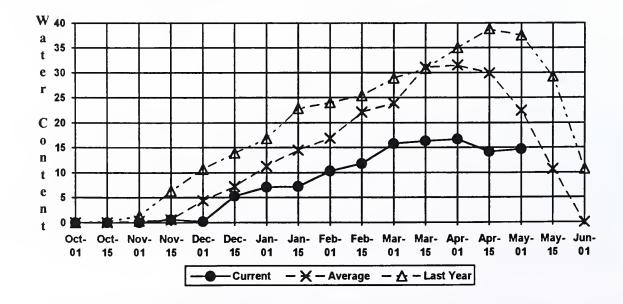
		<<	Drier	Future Co	onditions ==	Wetter	====>>	
Forecast Point	Forecast Period	     90%	70%		Exceeding * = Probable)	30%	 10%	30-Yr Avg.
	reliou	(1000AF)	(1000AF)		(% AVG.)		(1000AF)	
DUNGENESS RIVER nr Sequim	MAY-SEP	83	97	106	76	115	129	140
	MAY-JUL MAY-JUN	67 <b>45</b>	78 54	85   61	76 77	l 92 I 68	103 77	*112 79
ELWHA RIVER nr Port Angeles	MAY-SEP	180	225	l l 256	60	l l 287	332	427
	MAY-JUL	148	184	l 209	61	l 234	270	, 342
	************************************					, ====================================	*********	
OLYMPIC PEN Reservoir Storage (	INSULA RIVER BA 1000 AF) - End					C PENINSULA RI nowpack Analys		1996

	OLYMPIC PENINSULA RIVER B Reservoir Storage (1000 AF) - End	OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - May 1, 1996						
Reservoir	Usable   Capacity  			Watershed	Number of Data Sites	This Yea Last Yr	r as % of Average	
					Elwha River	1	11	6
					Morse Creek	1	42	41
					Dungeness River	1	8	5
				į	Quilcene River	1	39	66
				į	Wynoochee River	0	0	0

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

# Mount Crag SNOTEL Elevation 4050 ft.



 <sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Issued by

Released by

Paul W. Johnson

Chief

**Natural Resources Conservation Service** 

**U.S. Department of Agriculture** 

Lynn A. Brown **State Conservationist** 

**Natural Resources Conservation Service** 

Spokane, Washington

# The Following Organizations Cooperate With the Natural Resources Conservation Service in Snow Survey Work\*:

Canada

Ministry of the Environment

Investigations Branch, Victoria, British Columbia

State

Washington State Department of Ecology

Washington State Department of Natural Resources

Federal

Department of the Army Corps of Engineers

U.S. Department of Agriculture

**Forest Service** 

U.S. Department of Commerce

NOAA, National Weather Service

U.S. Department of Interior

Bonneville Power Administration

Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs

Local

City of Tacoma

City of Seattle

Chelan County P.U.D.

Pacific Power and Light Company

Puget Sound Power and Light Company Washington Water Power Company

Snohomish County P.U.D. Colville Confederated Tribes

**Spokane County** Yakama Indian Nation

**Private** 

Okanogan Irrigation District

Wenatchee Heights Irrigation District Newman Lake Homeowners Association



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# Washington Basin Outlook Report

Natural Resources Conservation Service Spokane, WA

